Technical Memorandum

Date: July 20, 2015

From: John Kern, Kern Statistical Services, Inc.

To: Stephanie Vaughn, EPA
Scott Kirchner, CDM

Re: EPA Review of CPG Approach to Mapping Contaminants of Potential Concern, documentation and supporting materials

Enclosed herein are materials supporting the paper titled *Lower Passaic River Study Area Remedial Investigation and Feasibility Study, EPA Review of the Cooperating Parties Group Approach to Mapping Contaminants of Potential Concern*, which was prepared by EPA and submitted on June 10, 2015. The supporting information includes:

1) an inventory of data subsets used to produce each of the figures in the subject memorandum, organized within folders numbered based on the corresponding figure number.
2) an ARC-Map map package providing data and supporting GIS layers used to derive the River Mile 10.9 example,
3) pdf files containing computer output providing intermediate details supporting the SWAC vs RAL simulation study, and
4) electronic files containing simulated 2,3,7,8 TCDD maps on request.

In the process of developing supporting information, an error in the COPC memo was identified, wherein the axis labels and range of influence in Figure 17 and the range of influence was mislabeled in Figure 19. Included in the supporting information is a revised version of the memo with corrections to labeling of Figures 17 and 19 as well as text referring to these figures.

The intent of the simulation was to evaluate the situation where the long-flow range of influence was similar to the distance between decision unit centroids, emulating the relationship between the range of influence and distance between Thiessen Polygon centroids in the actual Passaic River data. The grid spacing was mislabeled in Figure 17 by a factor of 5 because the scale was expressed in terms of row and column indices in the simulation grid, rather than feet. The range of influence was mislabeled, as 64, which was approximately 1/3rd of the actual 201-foot range of influence that was simulated. This range of influence was less than the distance between centroids as was intended, so to evaluate the sensitivity of the simulation results to this deviation, an additional simulation run was conducted with the range of influence set to 320 feet (i.e. the distance between decision unit centroids as intended). The results of this additional simulation run resulted in very similar results to those provided initially. The revised results are also provided as pdf output. The conclusions reported in the original memo were unchanged because both the stated range of influence and the distance between decision unit centroids were both rescaled similarly, resulting in mitigating effects.